Sealift

MAGAZINE OF THE MILITARY SEALIFT COMMAND

August 1979

Need To Be Aware

In my initial comments in the July issue of Sealift magazine I indicated that there was much I had to learn about the command, its day-to-day business, policies and the skills and attitudes of MSC people.

Since that time, I have been doing exactly that. I have met frequently with the MSC headquarters staff, and have visited MSC, Atlantic and MSC, Pacific as well as with the crewmen of a few MSC ships.

The more I see and the more I hear, the more impressed I am, both by the complex missions which are assigned Military Sealift Command and the abilities and attitudes of a highly diverse work force.

In one sense I am reminded of a story of two young women who approached a golf pro hired by a sporting goods store to give golf lessons to its customers. He asked one if she would like to learn to play golf and replied, "Oh no, not me. My friend wants to learn. Don't you remember, I learned yesterday."

I doubt if that incident ever happened, but it's an effective illustration of one thing I have learned—that with MSC there is literally no end to challenges. Like the golfer, the sealift manager is never fully the master of his destiny.

While it may seem that the business of delivering cargo, supporting Navy fleet ships and operating scientific support ships might become somewhat routine, that is not the case.

MSC is a service organization. We respond to requirements levied by the Army, Navy, Marine Corps and Air Force, or, in some instances, by the Joint Chiefs of Staff.

But, just as in a card game, what we do with the cards—or the assignments—we are dealt is directly up to us. We have to know what is going on and what the other members of the Defense transportation team expect of us. We have to approach our tasks in a logical and systematic manner. If we do not do each job well, we are the losers—as MSC and Navy members or employees, as part of the Defense Department mobility team, and as citizens of a nation whose security is directly related to mobile and strong military forces.

We hardly need be reminded that we have to perform every task in an effective and yet economical manner if we are to meet the expectations of those we support.

However, in the past few weeks, we have been reemphasizing cost reduction, or cost avoidance. Call it what you will. But, that MSC-wide emphasis is not designed to meet any program goal. It is, rather, a reflection of the same problems we have as individuals. Inflation accelerated by high fuel costs and increasing costs for life's basic necessities are as real to the sealift manager as they are to each of us and our families.

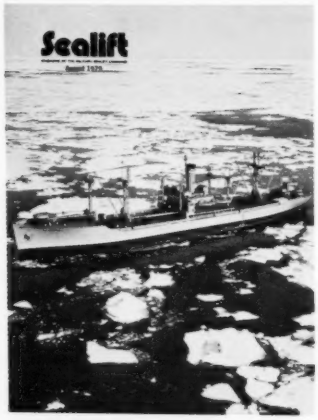
And we need to do the same things to resolve MSC problems. We must determine what is necessary and how we can get or do it at the least possible cost. We need to learn what we can do without. We need to challenge those who persist in doing the same things in the same old way just because that's the way they have always been done.

In an organization as large as MSC, operating as we do over a vast expanse of the world, and relying on ships that in many cases do not have modern propulsion plants, communications or navigation gear, or automated systems designed to limit costs, there are bound to be inefficiencies. But, we can limit those inefficiencies if we are innovative, demanding, and vigilant—if we make a continuing and honest effort.

Even though MSC expenses may temporarily exceed our revenue, that does not mean we can resolve our problems simply by limiting expenditures. There are instances where an investment may be required to modernize a ship or improve a system since the long-term result will be savings which exceed the investment cost. We do have to tighten our purse strings, but that alone is not enough. We must also streamline our operations and focus our effort on those problems that are susceptible to effective management.

We also must be flexible in our decision making. While we recognize that trial and error is not an effective way to bring about change, we would be managerially myopic if we were reluctant to experiment or to bring about change solely because we fear failure.

We need to be bold, and logical. We need to be innovative without forgetting the lessons learned from experience. We need to be cost conscious yet ready to make those investments—effort or money—which promise a return. Above all, we need to be aware—aware of our problems, aware of the expertise we have at our disposal, aware of our need to work together for mutual benefit. All that I have seen indicates we are.



COVER: Polar ice that sometimes traps and scars ships is watched and tracked by planes of the Fleet Weather Facility. See page 14.

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Sealift

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The first of seven new fleet tugs to be operated by MSC transited the St. Lawrence Seaway and is operating with the Second Fleet in the Atlantic area.

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Navy's Fleet Weather Facility provides polar ice data for MSC's supply ships.

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Modern Powhatan Joins MSC Fleet

By Martin Gershen

On bridge of Powhatan as it leaves Marinette are (from left): pilot Capt. Morgan Howell (wearing beret), AB John Powers at wheel, Capt. Henry Pouttu and Third Mate John Matwijeczko at engine throttle.

USNS Powhatan, first of the new class of fully automated fleet auxiliary tugs joining Military Sealift Command, arrived at Little Creek, Va. following its maiden sea voyage that took it through four of the five Great Lakes.

Powhatan, under the command of Capt. Henry A. Pouttu, a New Yorker and an ex-Marine drill instructor, left the Marinette Marine Corp. Shipyard on the Menominee River June 30 and arrived at the Canadian seaport of Montreal on the fourth of July. The river runs between Menominee, Mich. and Marinette, Wisc. and empties into Green Bay.

Going through the many locks, canals, rivers, and little lakes that join the Great Lakes proved an unusual experience for most of the veteran seamen aboard. They also gained a healthy respect for Great Lakes seamen following two nights of back-breaking work handling lines as they moved through the Welland Canal that bypasses Niagara Falls and the locks of the St.

Continued

"I've been at sea for 25 years and this is the sweetest ship I've ever had."

Powhatan poses on Green Bay before heading for Norfolk. Fully automated, Powhatan is the first of seven 225-foot, diesel powered Navy fleet tugs that will be operated by MSC.

Powhatan

Continued

Lawrence Seaway leading to Montreal.

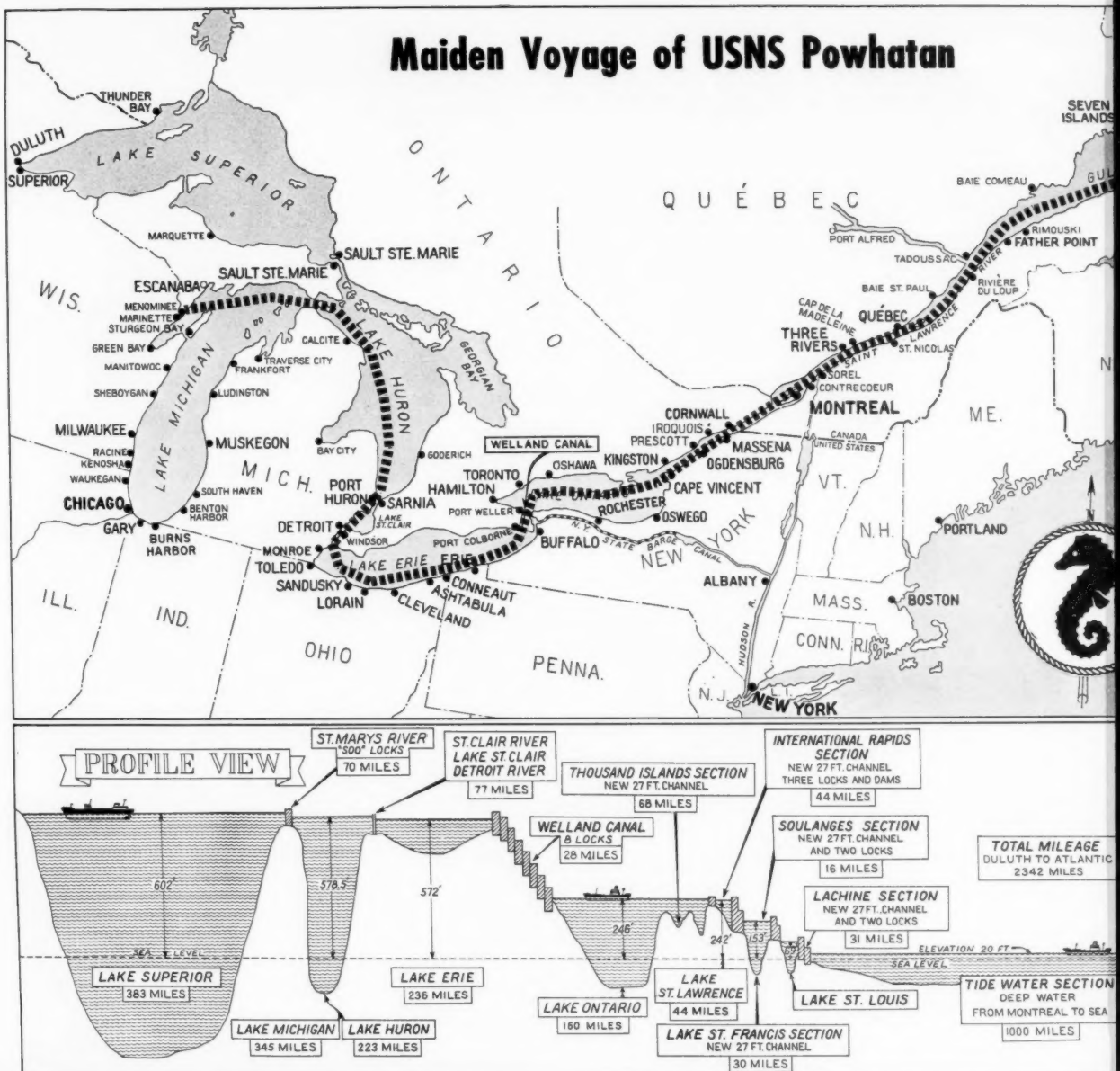
Able Bodied Seaman John Robert Powers couldn't get over the 77 miles of heavy ship traffic connecting Port Huron to Detroit through the St. Clair River, Lake St. Clair and the Detroit River.

"That river was like a superhighway," he said.

"I almost fell asleep eating my breakfast," said Able Bodied Seaman Charles Angus, of Mineral Wells, W. Va., after working all night.

And ordinary seaman Peter Fanning, of New Bedford, Mass. on his first voyage in the deck department said, "I sure had a good workout. Now all I want is some sleep."

But perhaps the highlight of the trip for the crew was the cruise of



the Thousand Islands that dot the mouth of the St. Lawrence River separating New York State from Ontario, Canada.

"I guess this is the best view I've ever seen, except maybe Cuba," observed AB Charles Angus standing the bridge watch as the ship sailed through the islands.

"Going through the Straits of Magellan around the horn was okay. But there ain't nothing to see but hills," he observed.

Powhatan was followed through the Thousand Islands by scores of pleasure craft whose curious occupants first stared, then waved at a U.S. Navy ship sailing in their waters.

The pilot for this part of the voyage, Capt. Sven Gabrielsson, doubled as a tourist guide as he pointed out some of the more interesting homes on the islands.

Then noting all the modern navigation equipment aboard the Powhatan, he observed, "This (ship) will be a pleasure for the river pilot. He could run it up the St. Lawrence backwards. Usually he gets ships with small rudders, engines that don't work and crews who can't speak English."

But when the river pilot boarded the ship at the Iroquois lock, he had a problem getting a cup of coffee. On every maiden voyage something is likely to go wrong. With the Powhatan, fresh water was virtually unobtainable on the run up the St. Lawrence River.

Powhatan, built in the configuration of an oil company resupply vessel, is equipped with two 20-cylinder, 3,600 horsepower diesel engines, originally developed for railroad locomotives. They are controlled from the bridge.

The ship has a bow thruster, a propeller up forward that enables it to be maneuvered more easily and twin screws that can be pitched, allowing for instant maneuverability.

Its 9,000-pound Moorfast anchor has a fluke capable of adjusting from 34 to 50 degrees and allows the ship to keep its head while pulling a distressed vessel. Indeed its entire towing operation can be automated with the ship being operated by a small crew from a console.

The engine room also is fully automated. A control panel is located in the chief engineer's cabin so that if an alarm goes off he can immediately determine the problem.

The Coast Guard requires that someone be on watch in the engine room around the clock during the first year of operation. After that, no watch standing personnel will be required in the engine room.

Also aboard the ship are two 871 Detroit diesel driven fire pumps that can operate independently from the ship's firefighting equipment. Its two water cannons can "fire" water or protein foam.

The bridge of the ship has a Gyro

"That river was like a superhighway."

Pilot, two radars and a Sperry collision avoidance system that can spot 20 targets simultaneously.

However, the Sperry company failed to equip its amazing device with a Hood so that the screen could be read in daylight. But Yankee ingenuity prevailed and Third Officer John Matwijeczko adapted an old cardboard carton to the highly complex electronic device so it could be read in bright sunshine.

The wide working space on the after end of the ship offers sufficient room for salvage and diving operations, and below there are bunks for 20 Navy salvage and diving crewmen. The Navy men will board whenever their services are required.

The ship also has an oil spill recovery system with an oil skimmer that can be towed. It also is self-propelled, providing Powhattan considerable versatility in fighting an oil spill.

Powhatan also is equipped with a new type of towing system, heart of which is the traction winch. Ten-inch nylon towing line also replaced wire line normally used for towing.

The nylon line is threaded into ridges of the winch and not wrapped on top of itself like wire line.

Because of the ultramodern equipment, the manning scale of the Powhatan calls for only 20 crewmembers. Included are a master and two mates, four able bodied and two ordinary seamen, a chief engineer, a first assistant and a third qualified

Continued

Powhatan

Continued

member of the engine department, a combination steward-cook, a cook-baker and two utilitymen. Added to this is a military detachment of one chief radioman, one first class radio man and two electronic technicians.

By way of comparison, the Atakapa, an MSC fleet tug that may be replaced by Powhatan, has an 11-member deck department, an 11-member engine department, five in the steward department and a purser.

Temporarily, the Powhatan carries a deck machinist, John Staley, serving with the engine department, and a purser, Charles Malone.

But generally the captain is expected to serve as purser and to stand the 8 to 12 watch in addition to his regular duties. He gets paid overtime, of course.

The best part of the new tug, according to Powhatan crew, are the quarters and the food. The quarters are spacious with no more than two men to a room.

On the old tugs, Staley noted, the quarters are so small, "after one guy gets dressed he has to step out of the room so the other guy can get dressed. This ship is like a Las Vegas Hotel," he said.

"I've been at sea for 25 years and this is the sweetest ship I've ever had," added Robert Horton, the cook-baker of Willingboro, N.J. "I'm delighted with the facilities. I only have to walk 10 feet to the storeroom," he added.

Joseph Deavers, of Washington, N.C., the steward cook, also described the Powhatan as "a beautiful ship.

"You have a smaller crew, so it's more of a family affair. It's easier to season your food," he added, noting it gave him a better opportunity for more quality cooking.

Pouttu is thrilled with his command and despite the fact he virtually lived on the bridge of his ship during the passage of the Great Lakes, he had a smile of pleasure that never left his face.

Chief Engineer Robert Charlton, of Virginia Beach, Va. also was pleased with the Powhatan. He prefers smaller ships.

"The people are friendlier. Big ships are like big cities and I'm just a small town boy," he explained.

But, he added, "No matter how automated they make a ship, you still have work to do. The engines need tune ups, filters have to be changed, we have to maintain the sewage system. It's like running a city," he explained.

Also aboard ship is closed circuit television with consoles that can accept cassettes for training or entertainment.

The military department commander, Ken Paugh, a chief radioman, also is pleased with his new assignment, although he has sailed everything from destroyers to aircraft carriers during his 18½ years in the Navy.

"I love this duty. It's an interesting challenge," he said. "It will also be an educational experience for me. The captain is going to teach me navigation and I'll have an opportunity to learn how the engines work," he added.

Paugh was echoing the feeling of the entire crew who appeared quite happy with their new ship despite the few kinks that needed to be ironed out.

The ship should be right at home in Little Creek, working for the Second Fleet.

Powhatan, father of Pocahontas, was an Indian chief known also as Wahunsonacock. He was emperor of a confederacy of Virginia Algonquin tribes at the beginning of the 17th century. He ruled with an iron hand but initiated peace with the new English settlers that lasted until his death in 1618. ⚓

"I love this duty. It's an interesting challenge."

USNS Powhatan passes through a lock in the St. Lawrence Seaway.

"I almost fell asleep eating my breakfast."

The food is first rate aboard the tug and so is cook-baker Robert Horton.

Powers tucks in a strand as he completes an eye splice.

Ordinary Seaman Peter Fanning (left), on his first cruise as a deckhand, gets pointers in making splices from AB Larry Lockhart.

Deck Machinist John Staley seems to enjoy the lakes.

Illustration by Art Mullins

Powhatan Pilot Master Mariner

By Martin Gershen

When they gave him his 20th license endorsement, the Coast Guard also named Capt. Morgan L. Howell Number 1 Master Mariner of the United States.

Former President Gerald R. Ford signed Howell's license with its three additional pages of pilot endorsements.

Howell, of Troy, Mich, is more than a ship captain, a master of steam and motor vessels of all gross tonnage upon all the oceans of the world as well as the Great Lakes and its connecting and tributary waters.

He also is a first class pilot, certified by the U.S. Coast Guard which issues pilot licenses. He can take any type of ship into virtually every major seaport in the United States as well as the St. Lawrence Seaway and the five Great Lakes plus all their ports and harbors—from Duluth to Montreal.

In addition, Howell is certified to pilot any ship sailing the Mississippi, Illinois, Hudson, Harlem and many other rivers of North America. Howell, who is 77, has devoted his life to these feats, each of which probably would satisfy most mariners who hope to become pilots.

But Howell still is not satisfied.

On February 7 he is scheduled to sit for a license as a first class pilot in the Los Angeles and Long Beach areas. Meanwhile, he is studying to take the pilot's exam for Honolulu.

"You've got to draw every inch of the river by hand. You've got to know every shoal and rock and sandbank."

It's his next goal.

Like the skilled seaman he is, Howell always sets his sights on distant landmarks and steers a steady course towards them.

For the slim, trim mariner whose looks belie his age, studying for additional pilot's licenses is all in days work.

"Life is what you make of it. And if you want to work at something you might as well be a professional, giving it all you have," he said.

Howell was the first pilot on MSC's newest seagoing tug USNS Powhatan, on its maiden voyage from Marinette, Wisc. to Norfolk, Va.

Throughout his career, Howell maintained his studies aboard every ship on which he served as pilot. Leisure time simply doesn't exist for him. He always has something to do.

"I plan every day. Of course you never know what will happen on the bridge, but I try to study at least an hour a day, and I settle for half an hour," he explained.

"It took nine years to get my pilot's license for the Mississippi," he said. "You've got to draw every inch of the river by hand. You've got to know every shoal and rock and sandbank, and they're changing all the time."

He has four Mississippi River endorsements and one for New Orleans Harbor.

He is qualified to guide ships through many sections of the upper and lower Mississippi—and he knows every twist and turn in those areas. That knowledge is the result of a lot of study—and experience.

"New York was the toughest," he said. "They don't like outsiders."

Nevertheless he can pilot ships in

Continued

Pilot

Continued

New York Harbor and bay—up to Yonkers.

He has a separate endorsement for the New York State barge canals between Tonawanda, N.Y. and Waterford N.Y. and the waters of the Mohawk, Seneca, Oswego, Oneida and Genesee rivers.

And he has still another endorsement for waters between Waterford and Albany, between Albany and Beacon, and World's End which is near West Point.

All are in New York State.

He also can pilot ships from the Harlem River Spytindivel to World's End. Howell's formal education ended after his first year of high school when he decided to go to sea. It was 1922 and he was only 16.

"I guess I was a dropout, fallout, kickout, whatever. We lived in Canada where I was born and we were poor farm people."

"We didn't even know what a half a dollar looked like in those days.

"I remember going up to man in a fancy uniform on one of the lake ships and asking for a job."

"Get out of here boy. We need men, not kids," the man in the fancy uniform told Howell.

But as the crestfallen Howell walked away, the man in the fancy uniform shouted, "Hey kid, you come back tomorrow about this time and we'll see what we can do."

He came back the next day and was hired as a messboy.

"Then I went into the engine room as a coal passer. That's the guy who passes coal to the fireman who stokes the furnace. But when the fireman was drunk, which was most of the time, you did everything.

"I learned how to be a fireman. I was strong as an ox but I didn't like it."

So he became a deckhand, the first step to master mariner.

"I learned navigation and trigonometry and found out advancement wasn't hard at all. I decided that one day I would become a captain."

And he did.

By World War II, he was delivering small ships from the Great Lakes to the British and American navies in East Coast ports, in Canada and the United States. He also delivered tugs and small craft to the Army Transport Service, a forerunner of Military Sealift Command.

For two years after the war ended, he delivered ships anywhere in the world. But most of his life was devoted to being a pilot on the Great Lakes and to studying for still one-more license endorsement.

Why does he do it?

"Why does a man climb a mountain?" Howell responded.

Actually, he considers learning a part of his career. He frequently testifies as an expert witness in court cases involving maritime law.

Howell has no plans to retire.

"I plan to go out with my shoes on," he quipped. "I have met so many captains who talk about nothing else but retiring and buying a condominium in Florida. They're dead in two years.

"I'm eligible for a pension. But I have something a lot better than a pension. I have my health."

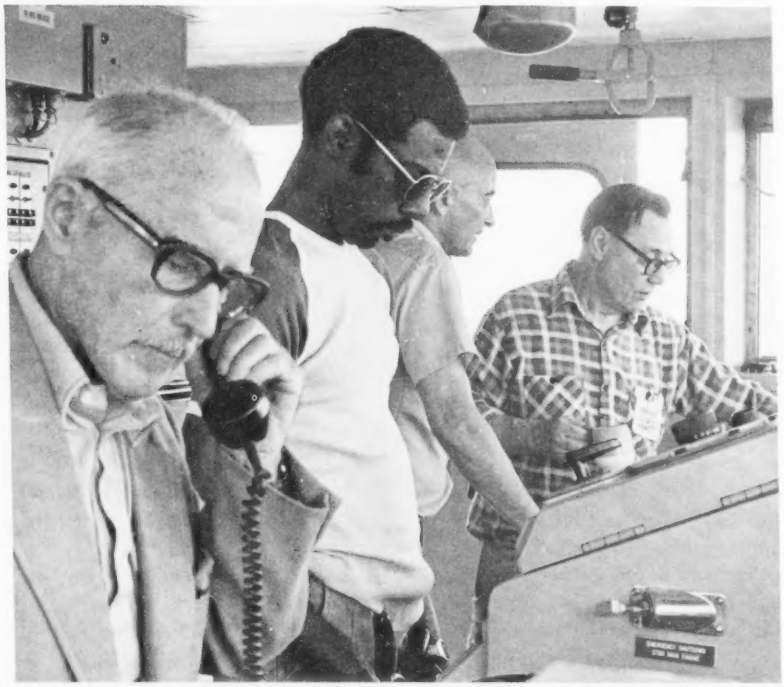
And an endorsement says so because he must pass an annual physical to remain a pilot.

He exercises every morning and studies every evening. Often in the darkness of a ship's bridge at night he says, he closes his eyes and commits to memory the physical details of the harbor he is studying.

"You have to know every marker, tide and shoreline of a harbor, and its topography, whether the shore is sand, rock, gravel or mud.

"Do you know there are 248 shoals in Lake Michigan?" He asked as he stood on the Powhatan bridge at night.

The collision avoidance system



Master mariner Morgan Howell (left) pilots USNS Powhatan through the St. Lawrence Seaway. With him on the bridge are (from left) helmsman Larry Lockhart, Powhatan Master Henry Pouttu and Chief Engineer Robert Charlton.

scanner is on, its radar sweep leaving tiny blips on the screen, warning the Military Sealift Command crew of potential hazards ahead.

"You see that?" Howell points to a series of blips tinier than his fingertip, but each with its own shape.

"That's Whiskey Island and there's Trout Island and Squaw Island and High Island and Gordon Island. And there's Tulip Island and Hatt Island. You spell that with two T's."

The 77-year-old Howell is a walking encyclopedia with a phenomenal memory who knows the five Great Lakes as intimately as the fingers of his own hands.

How far into the heart of America do the Great Lakes go? He is asked. Without hesitation he answers, "1,720 statute miles to Duluth, Minn."

How far is the voyage of the Powhatan from Marinette to Norfolk? The words are hardly out of the questioner's mouth before Howell has the answer, "2,792 miles."

"I guess I was a dropout, fallout, kickout, whatever."

Like a computer, he gives you a rapid though oral printout of data from his memory bank.

"The Great Lakes are 100,000 square miles of water. There are no minerals in the water, so there is no rust on the ships," he adds.

"Ships on the Lakes measure their speed in miles per hour, not knots. And when you go from Marinette to Montreal you pass through 16 locks and drop 578 feet to sea level."

But Howell is no tourist guide who pours forth facts to impress the uninitiated.

A former seaman aboard Powhatan had encountered disbelief from some seafarers when he claimed he sailed down the St. Lawrence River as a youth going into the Lakes aboard a Norwegian ship. That was in 1950, he claimed, nine years before the seaway officially opened to ocean-going traffic.

"What was the name of your ship?" Howell asks, perhaps testing the claimant's veracity.

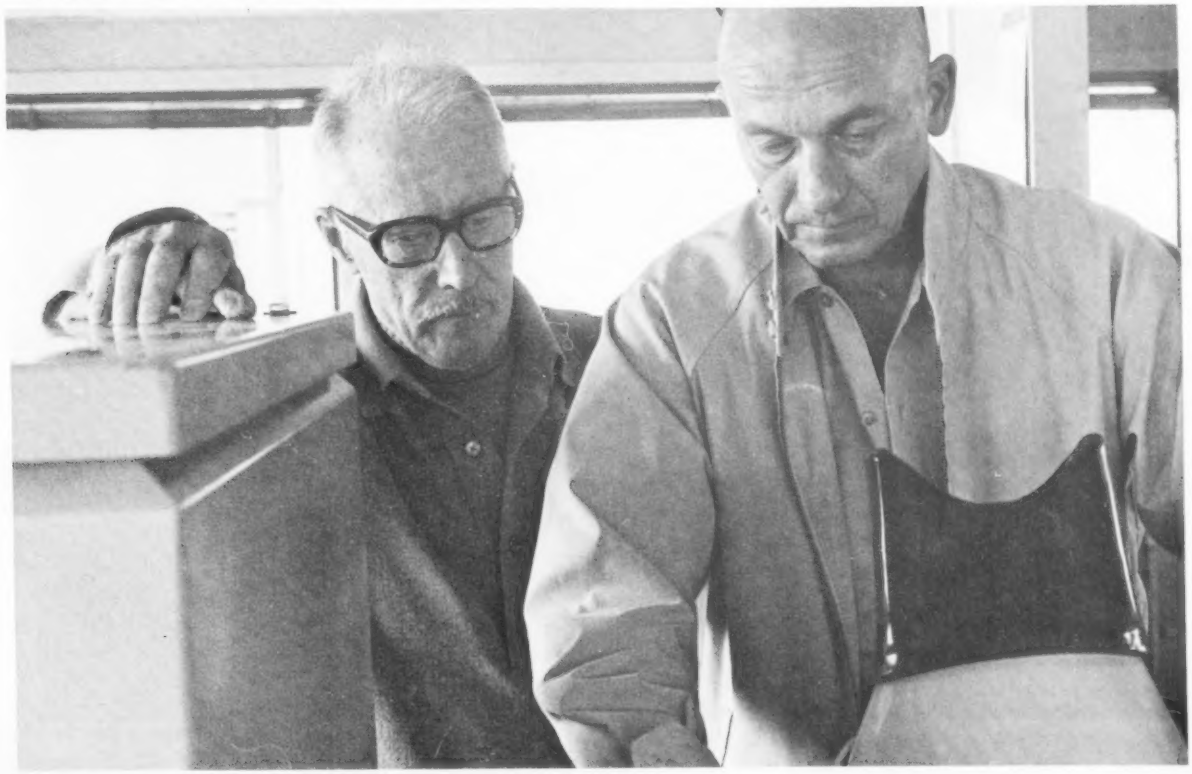
"The Ternefjell."

"Correct," Howell said. "She belonged to the Fjell Line, a Norwegian shipping company. The Norwegians have been sailing to the Great Lakes since 1925.

"Your Ternefjell," added Howell, "was 258.6 feet long. She had a 43-foot beam and a draft of 21 feet. Her engine was 1,500 horsepower—steam."

Some sort of marvel, this man Howell?

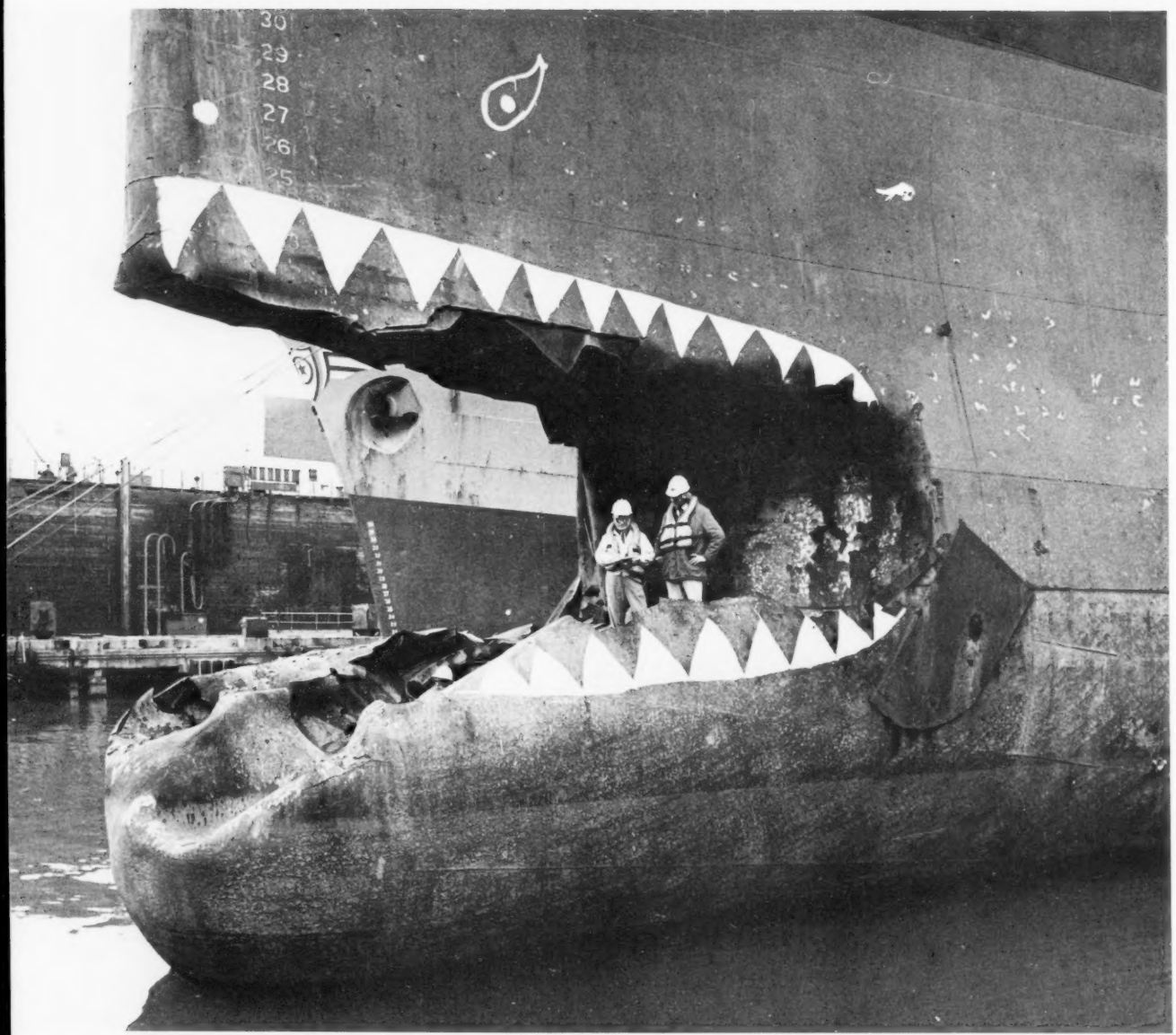
Nope. He's just master mariner of the Americas. And he has the Coast Guard papers to prove it. ⚓



Howell and Pouttu check the ship's radar.

Fleet Weather Aids Ships In Ice Country

By Lt. (j.g.) Daniel V. Munger



Antarctic ice chewed away this portion of the USNS Maumee during supply of McMurdo Sound in 1975–1976. Shipyard workmen added the teeth and an eye to the mouth-like bow.

Aerial observations and satellite analysis of ice cover provide the bulk of the information.

"X-Ray Delta Zero Four ice recon, cleared for takeoff, runway one-six, over."

"Roger, X-Ray-Delta Zero Four, out."

The white and grey Lockheed P-3C Orion patrol aircraft picks up speed rapidly and then lifts off the runway, banking sharply as it climbs out over the frigid waters of the North Atlantic. Point of departure is Naval Station Keflavik in Iceland. Purpose of the flight? A low level reconnaissance survey of ice covered waters surrounding the frozen island of Greenland.

Each year Navy ice observers from the Fleet Weather Facility at Suitland, Md. conduct ice reconnaissance survey missions in support of Military Sealift Command ships supplying U.S. military sites in the Eastern Arctic.

Each mission covers a three-day period during which time nearly 7,000 miles of ocean will be charted, including areas where ice conditions could well be dangerous for ships enroute to polar waters.

Navy flight meteorologists and aerographer's mates have been flying ice reconnaissance since the early 1950s in support of MSC. In 1951, MSC ships sustained more than $16 million worth of ice related damage during the construction of Thule Air Base in northern Greenland.

In the early 1950s, numerous sites throughout the United States, Canadian Arctic and Greenland were constructed as part of the early warning barrier known as the DEWLINE, or Distant Early Warning Line. A massive volume of supplies, and equipment was required to construct bases and MSC ships delivered much of the cargo.

Although sea ice presented a substantial danger to shipping, little was known about it and its seasonal peculiarities. Consequently, the Naval Hydrographic Office (now the Naval Oceanographic Office) was tasked with the development of what has evolved into the present Navy

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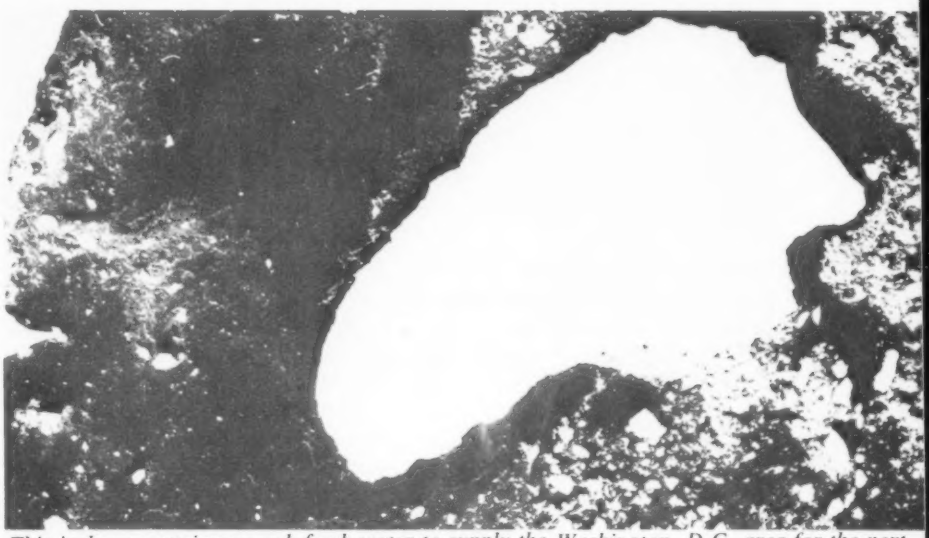

This iceberg contains enough fresh water to supply the Washington, D.C. area for the next 5,000 years. Viewed from the air, the iceberg is 45 nautical miles long and 25 miles wide.

Polar bears may find Arctic ice friendly, but MSC crew members are understandably wary of the powerful "natives."

Ice observers are briefed before take-off from Keflavik.

Fleet Weather

Continued

sea ice analysis and forecasting program.

Today's sea ice program, controlled by the Fleet Weather Facility, has expanded to a global, year-round support effort under the command of Cmdr. James C. Langemo. The facility provides environmental support to Department of Defense units in the polar regions of both hemispheres. Tailored weather advisories and detailed sea ice information are provided all MSC ships operating in polar waters.

Fleet weather ice observers Bob Davis and Jim Asip, both first class aerographer's mates, spent April, May and June flying ice reconnaissance out of Keflavik to provide Suitland-based satellite ice analyst-forecasters with ground truth data upon which they could base predictions for the critical Arctic resupply months of July and August.

Ice observations and satellite analysis of visible ice cover provide the bulk of the input into Suitland's operational ice forecasting program.

Let's take a look at all that is involved in tracking the world's sea ice.

It's Monday morning and Chief Petty Officer John Harper's crew of satellite interpreters has a busy day ahead. Today, roughly half of the world's sea ice must be located and identified as to type, thickness and coverage. The information will be provided to mariners whose present or expected courses may take them into "ice country."

Satellites are a primary data source. Each week several hundred pictures from various orbiting spacecraft are received by the facility's Ice Operations Department. Sea ice directly under the path of a satellite can be readily observed by sensors aboard the spacecraft. The data, transmitted from space and processed photographically, is the basis for the ice analyst-forecaster's "first guess" as to ice conditions in a particular area.

This initial analysis is refined as he receives additional ship and shore ice reports, synoptic weather information, and Navy ice reconnaissance data from the weather facility's aerial ice observers.

The ice analyst's product is really a chart that shows where the ice is, "frozen," so to speak, in time. When analysis of all data is complete, products tailored to the individual customer are produced in graphic form for transmission by mail, radio or electronic means.

During July and August this year, thousands of tons of cargo, liquid and dry, will be delivered to ports in the Eastern and Western Arctic. Two MSC tankers, Maumee and Yukon, will deliver fuel to Sondrestrom and Thule Greenland and the breakbulk cargo ship Pvt. John R. Towle will transport dry cargo to both ports.

After loading in continental U.S., Caribbean, or Mediterranean ports, each of the ice strengthened MSC ships will sail for the frozen north, but not before an optimum track ship route has been provided to help identify the safest passage through the hazardous and ice filled waters of Davis Strait and Baffin Bay.

It is fleet weather's job to identify a ship track that also will save time and money, a task that challenges the skills of the ice forecaster.

Sea ice forecasting is unique. No formal Navy training is available. Consequently meteorological officers and aerographer's mates assigned to duty at fleet weather must learn their trade by self study and hundreds of hours of practical application.

The first step for any forecaster is to make a reliable analysis. With that in hand, he can blend often complex oceanographic and meteorological factors into a final forecast.

As a rule of thumb, sea ice drifts at 2 per cent of the actual wind speed, at an angle of roughly 30 degrees to the right of the true wind direction.

If these were the only factors to be considered, a forecaster's job would be relatively easy. However, effects of surface currents and temperature also are critical to validity of the final forecast. Currents, for example, may either compound or negate the effect of wind in the forecast area.

A final but no less important consideration is temperature. When the winds blow cold off the continental land masses in the early fall, sea water cools rapidly and nears its freezing point. The salt content of

Workhorse for naval weather observing operations is the Lockheed P-3 Orion.

sea water lowers the freezing point to about 29 degrees Fahrenheit (1.9 degrees Celsius).

When sea water is "conditioned," or when it has been uniformly cooled to the brink of freezing, the job of forecasting rapid accumulation of ice over large expanses of ocean is indeed challenging. Currents, wind and thermal conditions tempt the ice forecaster like the Sirens to Odysseus, each demanding his attention.

Only experience can assist him making his decisions. Is it a shallow body of water with cold current advection? How long have the winds been out of the south off the continent? How long have the temperatures along the coast been this cold?

These are typical questions he must ask himself, and there is no hard and fast rule he can use drawing the final forecast line on the chart. Nevertheless, each forecaster knows what he decides can have a great impact on the safety and economical delivery of valuable cargo—and the safety of crew and ship.

To conduct a year-round operational ice program, Fleet Weather Facility has two officers, 15 enlisted specialists and three civilians in its ice operations department. Each of the 17 military personnel currently assigned are in a flight duty status and regularly are deployed to both hemispheres in support of Department of Defense operations.

Ice reconnaissance is an invaluable asset in obtaining first hand knowledge for relay to Suitland. There, ice data obtained by satellites is subjected to the tough evaluation of observers who actually saw the ice.

Was the concentration of ice really 3 to 5 eighths (oktas) coverage? Was the patch of 6 to 8 oktas of young ice (4 to 12 inches thick) really young, or had it reached a first year thin (12 to 28 inches thick)? (In the technical language of weathermen one okta equals one eighth coverage of the observed area. Eight oktas equals solid pack ice.)

Skull sessions between ice observers recently returned from deployment and forecasters whose eyes are the multi-million dollar sensors of satellites flying hundreds of miles above earth provide the catalyst to keep the present program dynamic, ever moving toward better support of the customer.

More than 200 consumers receive Fleet Weather Facility prepared ice products on a weekly basis. In addition to Department of Defense users, a host of foreign and domestic governmental and commercial organizations receive information weekly.

In 1976 the National Oceanic and Atmospheric Administration and the U.S. Navy formed a joint ice center at Fleet Weather Facility. The center provides civilian organizations with sea ice information. Ray Godin, a Navy trained meteorologist, is the NOAA representative and coordinates ice information requests from the public.

Because of the unique availability of satellite imagery essential to a global sea ice program, Fleet Weather has been authorized to provide sea ice information (on a not-to-interfere basis) to other users.

With Chief of Naval Operations approval, U.S. Allies also may receive ice information. Fleet Weather has become the world's main provider of sea ice forecasts and information.

One reason is that Fleet Weather Facility is ideally co-located with

Continued

Fleet Weather
Continued

the National Environmental Satellite Service, allowing Suitland based ice analyst-forecasters to get a first look at the high resolution satellite imagery received from the new TIROS-N polar orbiting environmental satellite.

Making in excess of a dozen daily passes over the polar regions, the satellite has infrared and visual sensors that can detect sea ice regardless of light conditions. However, TIROS-N can see only what is directly beneath it. If clouds obscure the surface, the ice beneath goes undetected.

Prior to 1972, ice satellite analysis was somewhat of a hit or miss proposition, and ice analysts were capable of making rudimentary projection of ice cover over large areas.

In 1972, the National Aeronautics and Space Administration launched the NIMBUS 5 spacecraft. It carried a passive microwave sensor that could look through clouds or the polar night. Its sensors also provided a unique display of sea ice and land mass areas and that allowed analysis of the world's sea ice on a year-'round basis.

Since 1972, the quality and reliability of Fleet Weather's ice analyses have increased dramatically. The addition of microwave has closed gaping holes that existed in the analysis process, the end result being a detailed and weekly portrayal of the world's sea ice.

The benefits? Sea ice is an insidious enemy for the ship master or mate. During its summer breakup, pack ice decays rapidly and melting water thaws holes in ice floes creating what is termed "rotten ice."

Transiting Arctic waters filled with many miles of the easily-broken, rotten ice can lull even a seasoned ship handler into a false sense of security. Lurking unobserved within the pack may be an occasional multiyear floe known to many seamen as "blue ice." That is virtually all fresh water ice, that has survived at least two seasonal melts. As ice goes, it is tough. As a matter of record, at extremely cold temperatures "blue ice" is as strong as steel. Consequently lookouts have learned to recognize its hue and to alert conning officers whenever multiyear ice is observed.

It is Fleet Weather Facility's job to identify areas where multiyear ice may be and to provide ships' masters with an outlook of expected Arctic or Antarctic ice conditions well before their ships set sail.

Fleet Weather sea ice forecasting record has been a good one. Since the early 1970s, seasonal outlooks for the Eastern and Western Arctic have enabled MSC planners to prepare ship expected schedules for Arctic supply so as to minimize hazards and lost time—and to better assure safety of ships and cruises. In the Western Arctic Cool Barge operations that begin at Seattle have been supported by Fleet Weather for several years. As part of Cool Barge operations, cargo for Alaskan DEWLINE sites is transported by tug and barge along the east-west corridor between Point Barrow and Barter Island, Alaska.

Don Barnett of the facility's ice special projects division has identified a five-year cycle in the movement of Alaskan sea ice. Of particular interest is the fact that during those years evenly divisible by five, ice conditions historically have been more than normally severe along the Alaskan North Slope. In 1975, cargo worth millions of dollars had to be airlifted or held over for next year because of Alaskan ice conditions that were the worst in recent years.

Even with the many forecasting successes there have been a few failures. In August 1977, USNS Potomac was damaged by ice while enroute to Thule, Greenland. From a ship handling view, the accident was unavoidable.

From the view of the ice forecaster analyst, every accident should be preventable. That's why they continue to seek new and more valid data sources, and to keep pace with development in the research and development community. New and more effective ways of gathering and using ice information are sure to follow. The men and women of Fleet Weather Facility are dedicated to that mission. ⚓

Lt. (j.g.) Daniel V. Munger is ice operations officer for the Fleet Weather Facility in Suitland, Md. Before his commissioning in August 1976 he was an enlisted aerographer's mate.

He has traveled to the Antarctic twice and the Arctic four times in support of Military Sealift Command's polar operations. Lieutenant Munger has had meteorological assignments in Puerto Rico, aboard the carrier USS Forrestal and with the Naval Weather Command headquarters in Washington.

MSC Charters Ship For Solid Shield '79

Story and photos by Russ Egnor

Containerized delivery of cargo has solved many headaches for business, agriculture and industry, just as it has for the armed services. But, while the military customer enjoys inherent advantages of container delivery, such as reduced handling of cargo, lower pilferage, less damage and speedier delivery, the container and intermodal delivery systems of which containers are a part also pose some problems. In a nutshell, the most vexing is how to unload non-self-sustaining container ships when the complex array of cargo handling equipment used to support peacetime operations is not available.

In short, how does the military load or unload container ships over the beach?

The problem won't go away. By 1985, as much as 85 per cent of U.S. sealift capacity may be provided by container ships, most of which need special port facilities to unload. Supporting an amphibious operation without port facilities poses a particular challenge to military logisticians, one they have been seeking to conquer in a series of over-the-shore delivery tests.

Military Sealift Command recently chartered the Greek-flag container vessel Mini Loaf for use in Operation Solid Shield, an annual 10-day training exercise involving more than 19,000 men and women from the Navy's Atlantic Fleet, the Fleet Marine Force, the Air Force's Tactical Air Command and Military Airlift Command, the Army's XVIII Airborne Corps and MSC, the Navy sealift operating agency.

Department of Defense wanted a small self-sustaining container ship capable of carrying at least ninety 8 by 8 by 20-foot containers for use in

Continued

Containers crowd the deck of the Greek container ship Mini Loaf chartered by MSC for Solid Shield.

A container is lifted from the ship by a spreader and crane and guided into a landing craft.

Solid Shield '79

Continued

Solid Shield. When no U.S.-flag vessels of suitable size were offered in response to the request, the 215-foot Mini Loaf was chartered.

During a previous series of tests, using helos, dirigibles, causeways, LSTs, barges and commercial cranes to name only some of the equipment evaluated, emphasis was on off-shore unloading of a non-self-sustaining container ship. Most container ships now in service are not self-sustaining.

However, Mini Loaf is equipped with two 15-ton cranes that can lift up to 30 tons in tandem. According to its master, Evangelos Mastorakis, the ship can carry up to 102 containers and has a total capacity of 2,972.4 deadweight tons.

More than 100 containers were moved from Mini Loaf to shore during Solid Shield. This marked the first operational test of the Logistics Over The Shore system, or LOTS, a concept of cargo delivery that has been developed through a series of previous military tests.

Landing craft lifted containers from the ship to a transportable elevated causeway where they were hoisted by crane to trucks and taken

After a container is delivered to the causeway, a Marine Corps truck takes it to a marshalling area.

ashore. Ten to 12 containers an hour were put on the beach during the operational test.

The causeway was developed and tested by the Civil Engineering Laboratory at Point Mugu, Calif., in 1975. It was used successfully in over-the-shore delivery tests at Fort Story, Va., in 1977 and again in 1978.

Each causeway section is a 21-by-90-foot pontoon that can be elevated to the desired height by double acting hydraulic cylinders at a rate of 30 feet an hour. Each causeway section can be erected in two to four hours.

The causeway features a turntable that can be used to reverse the direction of an 18-wheel tractor trailer in 30 to 60 seconds, an obvious necessity since backing trucks on or off the causeway would be both time consuming and dangerous.

Three representatives from the Military Sealift Command Office Southport, N.C. were aboard Mini Loaf to observe cargo delivery operations. Lt. Cmdr. Thomas L. Hamberger, Lt. John F. Letts and BM2 Gerald McKeller, Naval Reservists from MSC's unit at Wilmington, Del. were ordered to active duty to observe the tests. They conducted the on-hire surveys of the ship and

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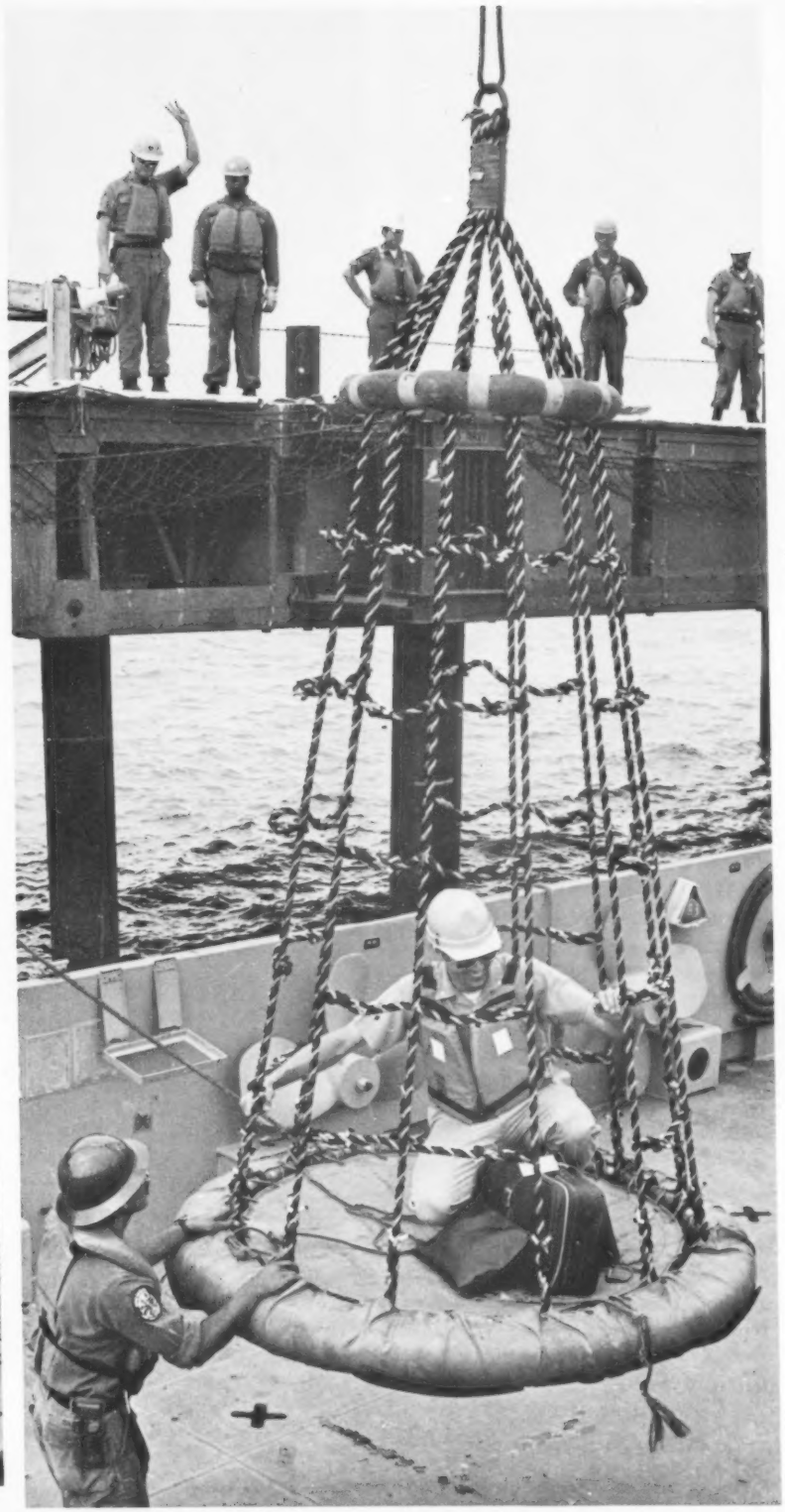
Navy cargo handlers can control four tractor trailers on an elevated causeway at one time.



Lt. Cmdr. Thomas Hamberger, an MSC reservist on active duty, is lifted from a landing craft to the causeway.

Mini Loaf master Evagelos Mastorakis leans on a binnacle while watching unloading.

Solid Shield '79

Continued

monitored container offloading operations.

Unfortunately, they were too far to sea to enjoy a practical joke the Seabees played on the Marines on shore. The Seabees operated the causeway turntable and the Marine Corps provided trucks and drivers.

Each Marine Corps truck rolled off the causeway emblazoned with a Seabee emblem across each mud flap. A Seabee, armed with spray paint and stencil, crouched behind each truck as it drove on the turntable. As the driver's head was turned, he decorated the mud flaps.

As revenge, the Marines plotted to steal a large molded bee mounted on the top of a 120-foot steel causeway piling. Somehow, probably because they were usually on the move, they never did pull off a successful "bee-nap."

Despite the good natured service rivalry, the segment of Exercise Solid Shield involving Mini Loaf was judged a success. The military demonstrated that it can support military forces in areas without fixed ports, moving cargo-filled containers to and over the beach with existing systems and equipment.

Boarding the Mini Loaf takes acrobatic skill.

The over-the-beach supply operation was, of course, only a part of a larger exercise that involved amphibious assaults by Marine Corps units and air strikes and aerial delivery of troops, supplies and equipment. Solid Shield is an annual military exercise, having been held in each of the past 17 years.

It provides an opportunity to test joint operating concepts, new equipment and better ideas—a primary example being logistical support of assault troops over undeveloped beaches.

For MSC, exercises such as Solid Shield are invaluable in that they require procurement of privately-owned ships to support the military, an MSC responsibility. They also allow on-the-spot evaluation of the capabilities of varied types of ships. In addition, as in Solid Shield 1979, the exercises provide a realistic opportunity for development of specialized skills by MSC Naval Reserve members.⚓

NOTES & LETTERS

This issue begins a page of letters to the editor and brief last-minute items of interest to Sealift readers. Sealift invites letters but reserves the right to edit to meet space limitations. Letters should be signed but names will be withheld if requested.

I feel that I must take exception to the article by Lt. Cmdr. Kenneth Hartkopf entitled Seabee, LASH Suitable for Operations Support appearing in the May issue. Specifically, I refer to the comment: "Barges can be unloaded from both types in our open seaway and both have operated in relatively high seas."

Admittedly my experience is limited to LASH ships, however these vessels have encountered significant difficulty in loading-discharging operations in other than ideal sea conditions, even in relatively unprotected harbors. Representatives of Pacific Far East Line, who operated three LASH vessels, corroborated my position, and further add that any casualty to the LASH crane renders the entire system inoperative.

Undoubtedly, LASH does have value as a mode of transportation, however blind acceptance that it is a logistic panacea in all environments is inviting disaster to operational support.

Capt. Ronald D. Morin
Danville, Calif.

Barbara Burfeind's story in the April issue, Give a Sailor Enough Rope..., was interesting. However, someone has given her the wrong dope in a couple of areas.

First, I doubt that Mr. Weber uses a marlinspike in his work. Marlinspikes are used to make splices in wire rope, not for fancy work. Second, to say that "marlinspike seamanship is somewhat like macrame" is inaccurate. Marlinspike seamanship is a general term that covers all phases of rope work. Macrame is one small part of marlinspike seamanship.

Please take my criticism positively, as that's how it's intended. Thanks for an interesting article.

David Mitchell, AB
USNS Towle

Summer training cruises for midshipmen from state and Federal maritime colleges have been sponsored by commercial steamship companies as well as MSC for years. But this summer the USNS Dutton became the first MSC ship to take aboard students from the U.S. Naval Academy.

Four midshipmen, two male and two female, were assigned to the Navy Oceanographic Unit Two for a 28-day survey operation in the Western Pacific. Oceanographers collected bathymetric, magnetic and gravity data. The midshipmen are Maureen Foley, Barbara Morris, Tim Dunlevy and Vic See.

Crew of USNS Sealift China Sea, operated by Marine Transport Lines, Inc. for MSC, has received the annual Ship Safety Achievement Award sponsored by the American Institute of Merchant Shipping and the Marine Section of the National Safety Council.

The award was presented for the crew's speed and skill in reacting to a flash fire in the engine room. Master at the time of the fire was Capt. Peter J. McGuire.

China Sea also won the top award in 1977 for rescuing 31 survivors from an overloaded lifeboat during a storm in the Arabian Sea. Capt. Richard Fryer was master then.

A utility landing craft shuttles containers from ship to shore during operation Solid Shield off North Carolina. More than 100 containers were moved from the MSC chartered container ship Mini Loaf during a 10-day exercise involving more than 19,000 men and women from the armed forces. It was the first operational test of the Logistics Over The Shore system developed during previous tests. *See page 19.*

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